RENERGY

August 21, 2019

Re: Emerald BioEnergy, LLC
Response to Notice of Violation (NOV)
NPDES
Morrow County
4IN00204

Ms. Betsy L. VanWormer, P.E.
Environmental Specialist III
Ohio EPA Division of Surface Water

Subject: Response to NOV

Ms. VanWormer,

Please see Renergy's responses below to the NOV sent to us on August 13, 2019. We have also attached additional documents as referenced in the responses below.

1. Violation Description: During the inspection on August 8, 2019, biosolids were found on the surface of the fields in several locations despite the intent to inject the biosolids.

   Additional Information: The site authorization issued on July 11, 2019, includes the following special condition: "All biosolids beneficially used at these sites shall be injected beneath the surface of the ground or immediately incorporated into the soil. Biosolids that remain on the surface shall be incorporated within six hours."

   Requested Action: Please submit a plan detailing the procedures that will be followed during the land application of biosolids at authorized beneficial use sites to ensure that biosolids do not remain on the field surface when injection or immediate incorporation is required. Please include best management practices in this plan for injecting or incorporating at sites that have a cover crop.

Renergy Response to Requested Action:

Renergy and our contractors go above and beyond to inject and incorporate our liquid fertilizer at all times. Knowing that the head-lands, where the tractor turns around, can be problematic, we take specific measures to revisit each turn site and incorporate via plow. We have always followed industry best practices to fully inject the liquid fertilizer with the best agricultural equipment and methods available.

Multiple Renergy employees as well as OEPA inspectors were on-site at the fields on Blue Church Road to ensure best practices of land application were being followed. In fact, when a Renergy employee asked if our land application was sufficient, an OEPA inspector mentioned we were doing a "great job injecting". Our manager of Soil and Water as well as our Plant Operations Manager and CFO did multiple inspections to ensure we were in compliance throughout the entire application on Blue Church Road. We have photos documenting the field you reference in your NOV as it was being applied that show full injection was achieved

and all rules were being followed. In a follow-up meeting with OEPA Division of Surface Water associates the day of your inspection (Aug 8), it was stated that, "No risk to human health or the environment was found" at the Blue Church Road land application sites.

In response to your requested action, we have updated our Land Application SOP to further detail procedures to be followed by our contractors and will review the document with them in person. We will attach the updated SOP and highlight the additions for your review. Specifically, we have added sections on checking field conditions prior to land application to ensure moisture levels are appropriate and will not result in pooling and reiterated that all land application equipment should be calibrated on a regular basis.

2. Violation Description: The agronomic rate calculations for these sites were not available at the facility when requested on August 9, 2019.

Additional Information: An agronomic rate calculation for Site 21-00215 was performed by Renergy on August 9, 2019. This rate calculation was performed for two crop rotations, therefore, biosolids cannot be land applied again at least until both crops have been harvested.

Requested Action: Please provide the agronomic rate calculations for sites 21-00215 and 21-00216. Please also submit a plan detailing the procedures that will be used to ensure that agronomic rate calculations are performed for each authorized site prior to the beneficial use of biosolids and are provided to the beneficial user for correct application. This plan shall also include procedures to ensure that records requested by Ohio EPA are being maintained at the facility and are readily available.

Renergy Response to NOV / Requested Action:

The agronomic rate calculation for the sites stated above were completed prior to land application by our Soil and Water Manager, Logan Randles. At the time and date of request (8.9.19) Mr. Randles was traveling on a flight and could not be reached to deliver the ARC (Agronomic Rate Calculator) upon request. The ARCs were calculated with all data required from field descriptions, third party soil tests and effluent tests to provide evidence to the OEPA that the correct rates were applied to those fields in question by our contractors. All records requested on land application sites by the OEPA are being maintained and available as detailed below and also included in our Land Application SOP which is also attached. We have also attached copies of our ARC summaries for both fields.

- Agronomic rates will be calculated utilizing the OEPA ARC sheets and an ARC summary provided to contracted operators prior to any land application event by Renergy. ARCs and ARC summaries will be completed and stored digitally on a cloud based file storage system. The ARC summary as well as field maps will be supplied to contractors before scheduled land application.

Sincerely,
Ashleigh Lemon
Ashleigh Lemon
Communications and Sustainability Specialist
Renergy, Inc.

RENERGY

Land application Standard Operating Procedures and Restrictions According to OAC 3745-40-08

- Beneficial Use Land Application (BUA) of Class B Biosolids shall be done in accordance to all regulations described in the Ohio Administrative Code 3745-40. Class B Biosolids may be utilized at an agronomic rate that is specific for each beneficial use site.

- Agronomic rates will be calculated utilizing the OEPA ARC sheets and an ARC summary provided to contracted operators prior to any land application event by Renergy. ARC's and ARC Summaries will be completed and stored digitally on our BOX file storage system. The ARC summary as well as field maps will be supplied to contractors before scheduled land application

- Check Field Conditions - Just prior to biosolids application, check the condition of the fields for wetness and adequate access. Scheduled applications may have to be postponed due to weather restrictions or 100% saturated soil conditions in the top few inches.

- Land application equipment should be designed and maintained to ensure that biosolids are applied evenly across the field at the proper application rate. Application equipment (box spreaders or liquid applicators) should be calibrated regularly.

- Precipitation Prohibitions and Restrictions

    - Beneficial Use of Class B Biosolids shall not be applied during a significant and prolonged precipitation event.
    - For BUA sites with a dominant soil hydrological group A-C
        - If there is at least a 50% chance of precipitation over ½", surface application of Class B Biosolids may not be applied within 24 hours prior to the expected time of the rainfall event.
        - Class B Biosolids may be applied within 24 hours of a ½" rainfall (chance of 50% or greater) if the method of application is through injection.
    - For BUA sites with a dominant soil hydrological group D
        - If there is at least a 50% chance of precipitation over ¼", surface application of Class B Biosolids may not be applied within 24 hours prior to the expected time of the rainfall event.
        - Class B Biosolids may be applied within 24 hours of a ¼" rainfall (chance or 50% or greater) if the method of application is through injection.
    - Weather documentation must be kept on file, daily, during all BUA events. This can be done by going to weather.gov. Select the nearest location that

provides weather information. Print off the "Hourly Weather Graph" and keep on file.

- Isolation Distances/Buffer Zones

Table C-1: Isolation distance requirements-

	Surface application isolation distance requirements (feet)	Injection or immediately incorporated isolation distance requirements (feet)	Applicable biosolids classification
Bedrock	3	3	Class B or bulk exceptional quality
Surface waters of the state	33	33	Class B or bulk exceptional quality
Sinkhole or UIC class V drainage	300 without grass buffer; 100 with a grass buffer	300 without grass buffer; 100 with a grass buffer	Class B or bulk exceptional quality
Occupied Building	300	100	Class B
Private potable water source	300	100	Class B
Medical care facility	1000	300	Class B

Note: All Buffer Zones must be acknowledged Prior to BUA event by supplying the land application contractor with buffer map.

- Frozen or Snow Covered Ground
    - Between December 15th and March 1st BUA can only be done through injection (preferred) or same day incorporation. Same day incorporation is incorporation within 6 hours after biosolids are surface applied.
    - Between March 1st and December 15th surface application of Class B biosolids is prohibited on frozen or snow covered ground unless:
        - There is no less than 90% ground cover (grass, corn fodder, etc.) and there is no cover of ice or snow.
        - Surface application may not exceed an application rate of 5,000 gallons per acre
        - Application may not occur on more than 20 contiguous acres. Application can be no closer than two hundred feet from surface waters of the state or water ways.

    - Attention must be given to outlets of BUA site surface drainage tile during and after application events. The OEPA must be notified within two hours if a runoff or seepage of Class B through drainage tile outlets is observed.

- BUA sites with subsurface tile drainage
    - All field tile outlets must be visually monitored before, during, and after BUA events. Monitoring will be documented and kept on file.
    - Methods or devices to stop or capture subsurface drain flow shall be immediately accessible.
    - If Class B biosolids reach the tile outlet to the surface waters of the state the beneficial use of biosolids shall cease and flow shall be stopped or captured and the OEPA must be notified no more than two hours after the observation is made.
    - Application rates may not exceed 13,000 gallons per acre regardless of application method (surface or incorporation).
    - If injection is used biosolids shall only be injected deep enough to cover the biosolids with soil but no less than 3 inches below the surface.
    - If injection is not an option or the farmer's desire all tile outlets at the BUA site are to be plugged at the time of the BUA event.

- Class B Biosolids BUA signs – According to OAC 3745-40-11
    - All BUA sites must have signs posted (signs provided by Renergy) no less than 7 days prior to a BUA application event.
    - Signs must be left at site no less than 30 days after BUA events are finished.
    - Must face each road frontage, within twenty-five feet of the road.
    - Are unobstructed from view.

- Documentation
    - Daily Logs of beneficial use application of Class B Biosolids must be documented and available at AD site for no less than 5 years.
    - Weather documentation during BUA events (see Precipitation Prohibitions and Restrictions)
    - Documentation of sign posting, buffer flagging, and tile outlet monitoring must be kept on file at AD site.

Updated: 8/13/19

	Estimated 1st Date of Application	**Field ID**	**Calculated Dry Tons per Acre**	**Estimated Average % Total Solids**	**Estimated Gallons per Acre Target**
	7/30/2019	DES-01-09	1.91	4.50%	10,179

	Estimated 1st Date of Application	**Field ID**	**Calculated Dry Tons per Acre**	**Estimated Average % Total Solids**	**Estimated Gallons per Acre Target**
	8/2/2019	DES-01-10	1.91	4.50%	10,179